Journal of Biomimetics, Biomaterials, and Tissue Engineering
Preface to Volume 11

JBBTE is also one of the few journals in the biomaterials and tissue engineering realm that publishes both research papers and review papers, and this journal spans the diverse but closely interrelated fields of Biomimetics, Biomaterials, and Tissue Engineering. This volume (volume 11) comprises 9 papers, all of which have a unique contribution to make to the interconnected fields of biomimetics, biomaterials, and tissue engineering:

1. Pradhan and Sarkar (India) report an informative biomimetic study of the nanostructure of the natural gem pearl, and how this nanostructure influences its extraordinary optical and dielectric properties.

2. Bao Ha, Nguyen Vu, Quan, Phan Kim, Hoang Tu, Hoang Dao, Dang Vu and Nguyen (Vietnam) present a ground-breaking tissue engineering paper on the use of dental pulp stem cells in the tissue engineering of teeth.

3. Subramani, Mathew, Hosseinkhani and Hosseinkhani (USA, Taiwan) present a detailed review paper with 117 references on a topic of significant interest in the dental realm: peri-implantitis around dental implants, and the current surgical and non-surgical therapies for this condition.

4. Branham Govender and Ross (South Africa; USA), report a novel biomimetic study on the topic of selective antibody-based extraction of disease-causing toxins in kidney dialysis.

5. Majhi, Pyare and Singh (India) present a detailed research paper on fluoride-doping of bioglass. Bioglass is the only bioactive biomaterial capable of bonding to both bone and soft tissue in vivo. This study documents the effects of fluoride on this important biomaterial.

6. Buonsanti and Pontari (Italy) present a fascinating biomimetic study on the topical issue of cryogenics, exploring the parameters of ice-seed generation and their effects on the risk of cell membrane rupture in cellular cryo-preservation.

7. Singare, Zhong and Sun (China) present a very topical study on the use of 3D printing to produce vascularized tissue for tissue engineering applications. Their focus is on the liver. The future of tissue engineering hinges on scaffold vascularisation, and the burning question for the future is: does the hope for the future lie with bioreactors or 3D printing? This manuscript sheds further light on this vital question.
8. Liu, Fan, Miao, Xiao, Good and Wei (Australia, China) present an innovative research study on bone tissue engineering involving doping biodegradable scaffolds with vascular endothelial growth factor (VEGF) and bone morphogenetic protein (BMP).

9. Chen, Zhao, Wang and Liu (China) present an inventive biomaterials research paper that involves the use of supercritical CO₂ for the fabrication of protein-doped biodegradable microspheres for drug delivery, and measuring the protein release characteristics.

These nine papers document cutting edge research in the interrelated disciplines of biomimetics, biomaterials and tissue engineering and make a significant contribution to the growing body of scientific knowledge in these new and rapidly growing fields of medical and scientific endeavour.

Prof Andrew Ruys
Editor in Chief: JBBTE
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